



**World Class Standards**

**ETSI TC TETRA  
STANDARDIZATION  
ACTIVITIES**

ETSI Presentation to ISO SC27

## Simple summary

- Digital cellular radio for PMR/PAMR market
  - Secure for point to point and point to multipoint calls
  - Rapid call setup and tear down (<200ms)
  - Clarity of voice communication in noisy environments
- Offers simultaneous Voice and Data communications
- Offers multiple data communications modes and data rates

- 25kHz radio channels
  - Full duplex allocation
  - 400MHz band, 10MHz duplex spacing
- 4 slot TDMA
  - Single slot voice, multi-slot data
- Frequency agile
  - Autonomy of cell selection by MS

- Critical communication services
  - Public safety (blue light services)
  - Emergency services support
- Industry
  - Logistics, mining, utilities ...
- Others ...

## ● Authentication

- Symmetric, mutual, autonomy of terminal

## ● Encryption

- For unicast and multicast both voice and data
- Support of end-to-end encryption

## ● Key management

- Provides over the air key management protocol

## ● Support for end-to-end encryption

- V+D (trunked mode) security
  - EN 300 392-7v3.3.1
- Direct mode security
  - EN 300 396-6v1.5.1
- Support for e2e
  - ES 292 109v1.1.1

# Security classes – Trunked mode



Class	Authentication	OTAR	Encryption	Enable-Disable
1	O	O	-	O
2	O	O	M	O
3	M	M	M	O†

KEY: M = Mandatory  
O = Optional  
- = Does not apply  
† = Recommended

- For encryption
  - ETSI developed TEA1/TEA2/TEA3/TEA4
  - Review underway to address TETRA deployments through to 2040
- For authentication and key management



# Where is TETRA going?



- Broadband
  - Integration of LTE to radio
- IP everywhere
- Multi-network roaming
  - 3G to TETRA
- More frequencies